

No. 222,270.

Fig-1.

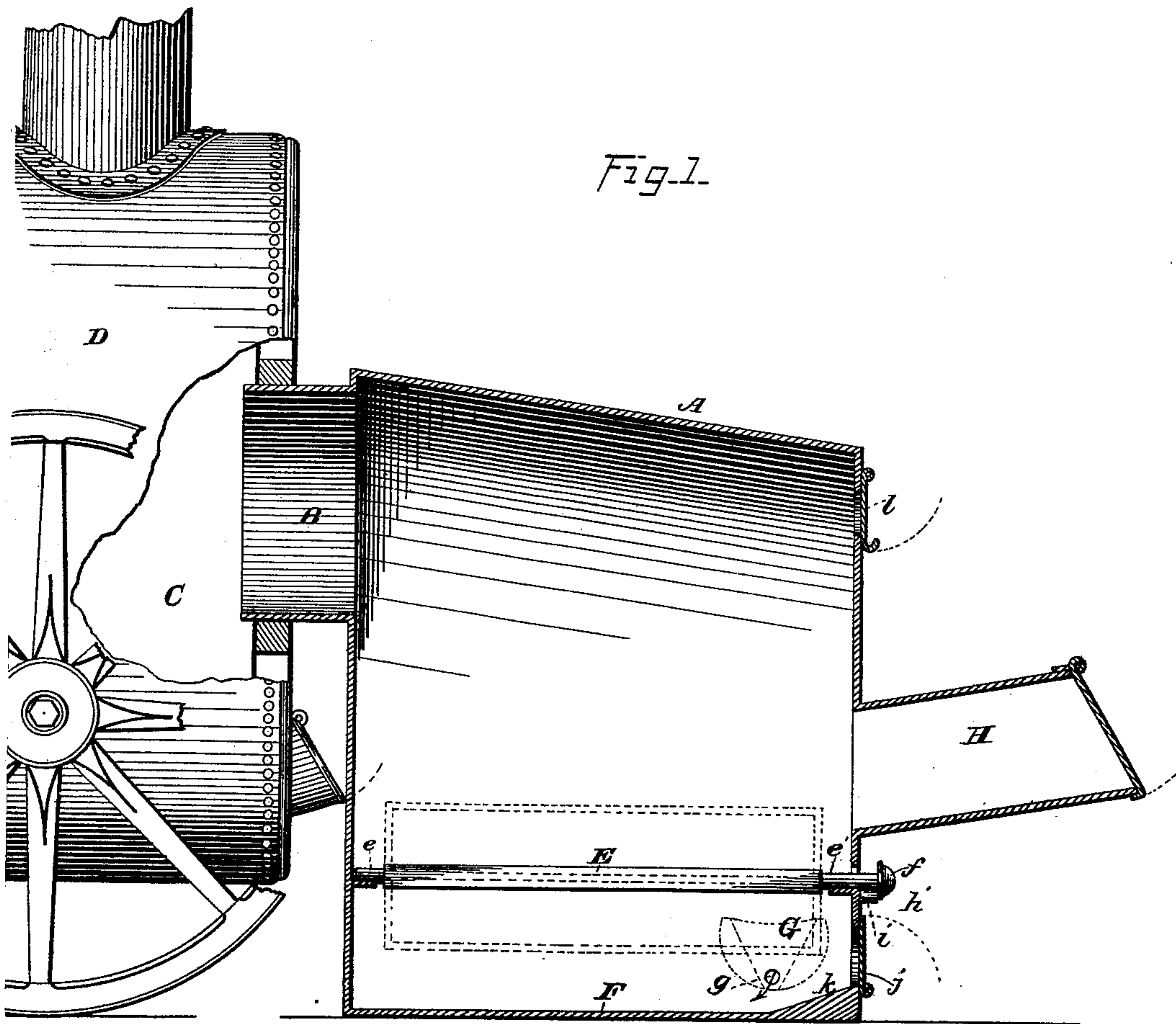
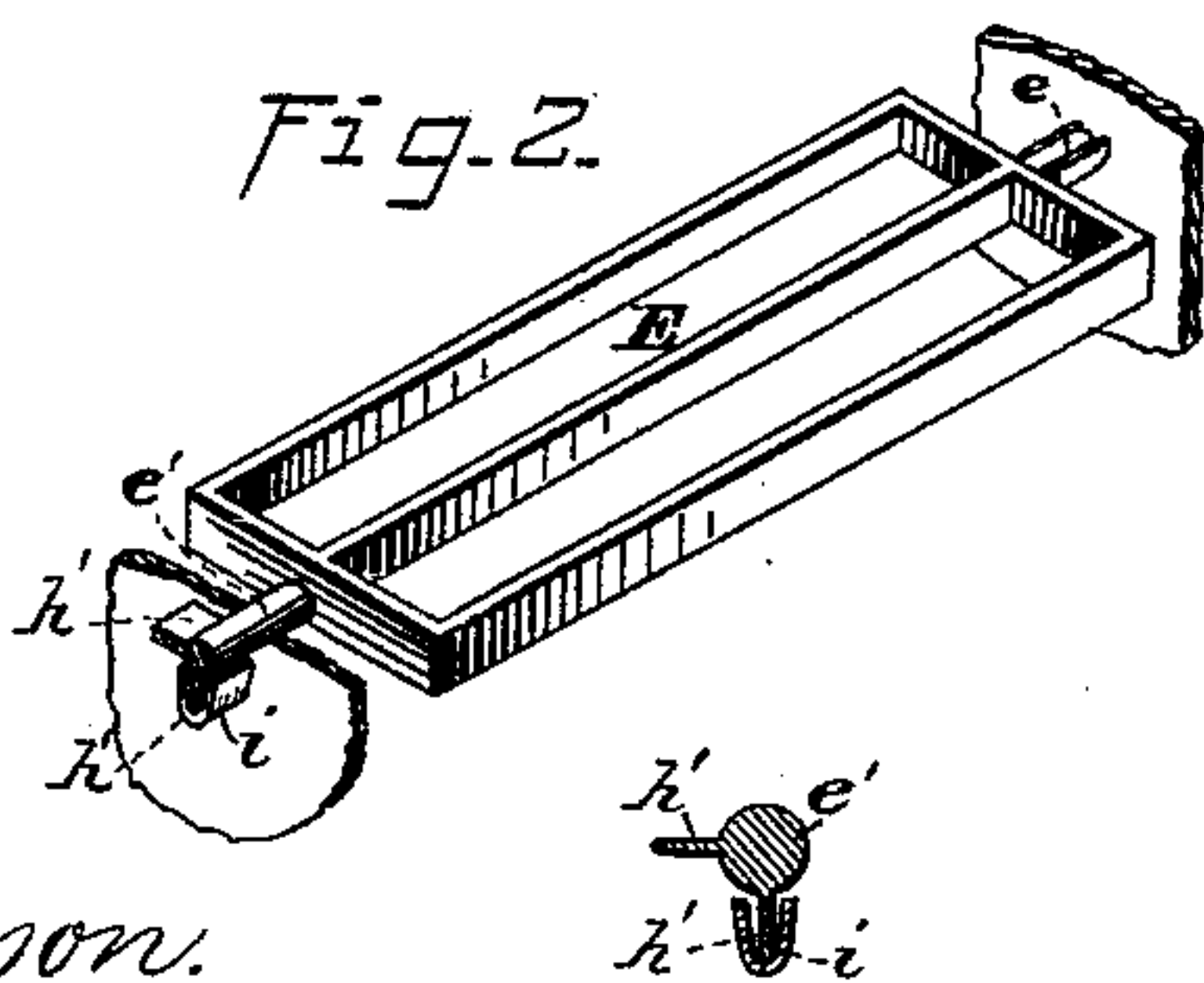


Fig-2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HARRISON GILLET, OF LAKE CITY, MINNESOTA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO WILLIAM B. LUTZ, OF SAME PLACE.

## IMPROVEMENT IN FIRE-BOX ATTACHMENTS FOR FARM-ENGINES.

Specification forming part of Letters Patent No. 222,270, dated December 2, 1879; application filed September 3, 1879.

### *To all whom it may concern:*

Be it known that I, HARRISON GILLET, of Lake City, in the county of Wabasha and State of Minnesota, have invented certain new and useful Improvements in Fire-Box Attachments for Farm-Engines, of which the following is a specification.

My invention relates to a portable fire-box for utilizing straw, hay, shavings, and other light combustible materials as fuel.

It is intended especially for use in connection with farm-engines, and to enable the burning of the straw upon the spot when grain is thrashed by steam-power.

It consists in an inclosed box or furnace, provided with a flue leading from its upper portion and adapted for connection with a boiler-furnace, and having at a suitable level a horizontal series of wide rotatable grate-bars provided with projecting handles, an outwardly-projecting feed-chute leading into the box above the grate-bars, and a water-chamber below said grate-bars. The flue may be shaped to fit into the door of any ordinary boiler-furnace. The outwardly-projecting feed-chute enables the straw to be easily fed, while, by means of the rotatable grate-bars, the cinders and ashes are readily broken up and prevented from becoming banked, and the water in the chamber below the grate-bars catches and condenses the light ashes, which would otherwise clog up the box and flues.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of my improved fire-box connected to a farm-engine. Fig. 2 is a detached view of one of the grate-bars and a portion of the box-wall.

The letter A indicates the fire-box, and B the flue leading into the furnace C of the farm-engine D through the doorway of said furnace.

The letter E designates one of the rotatable grate-bars, having journals *e e'* supported on suitable bearings projecting from the walls, the journal *e'* at the front being prolonged through the wall, and provided with a handle, *f*, and two short studs, *h h'*, projecting at right angles. Just below the aperture through which the front journal-extension, *e'*, projects is arranged a socket, *i*, adapted to receive the

studs *h h'* and prevent the grate-bar from rotating. The aperture is large enough, preferably elongated vertically, to permit the front journal of the grate-bar to be lifted a sufficient distance to disengage the studs from the socket, when desired, in order to rotate the bar. When the stud *h* is in the socket the grate-bar will be held in a horizontal plane to support the fuel; but when the stud *h'* is engaged in the socket the bar is held with its end edges vertical, so that the ashes and debris can drop through into the water-chamber. The grate-bars may be, of course, rocked or shaken only sufficiently to loosen up the fuel, and then secured again horizontally.

The letter F indicates the water-chamber, the function of which has been already described; and G designates a water pocket or funnel, secured to the outer surface of the box-wall, and having an outlet, *g*, through said wall, by means of which water may be supplied to the water-chamber.

The feed-chute H leads into the box above the grate-bars, and may extend outward any desired distance to enable the fuel to be fed through it safely and conveniently, said tube being provided with a suitable door at its outer end.

The water-chamber has arranged within it, in front of the ash-door *j*, an incline, *k*, over which the ashes may be raked out through said door.

A draft-opening, provided with a suitable door, *l*, is arranged in the front wall of the box, and by opening or closing this door and the ash-door *j* the activity of combustion of the fuel may be modified as desired. Through the upper door, *l*, also the fire may be watched.

My fire-box may be used in connection with any kind of boiler-furnace, and the manner of using it is obvious without particular explanation.

What I claim is—

1. The inclosed box provided with a flue leading from its upper portion and adapted for connection with a boiler-furnace, and having at a suitable level a horizontal series of wide rotatable grate-bars provided with projecting handle or handles, an outwardly-pro-



jecting feed-chute leading into the box above the grate-bars, and a water-chamber below said grate-bars, substantially as described.

2. The fire-box A, having flue B, rotatable grate-bars E, water-chamber F, and a suitable fuel feed-opening, substantially as described.

3. In a fire-box, the combination, with the water-chamber below the grate-bars, of the water-pocket G, having near its bottom an opening leading into said water-chamber, substantially as described.

4. In a fire-box, the water-chamber below

the grate-bars, having arranged within it an incline, *k*, leading from the bottom thereof to the doorway, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

HARRISON GILLET.

Witnesses:

GEO. L. MATCHAN,  
H. D. STOCKER.